

S. Mills,
Sash Balance.

N^o 29,439.

Patented July 31, 1860.

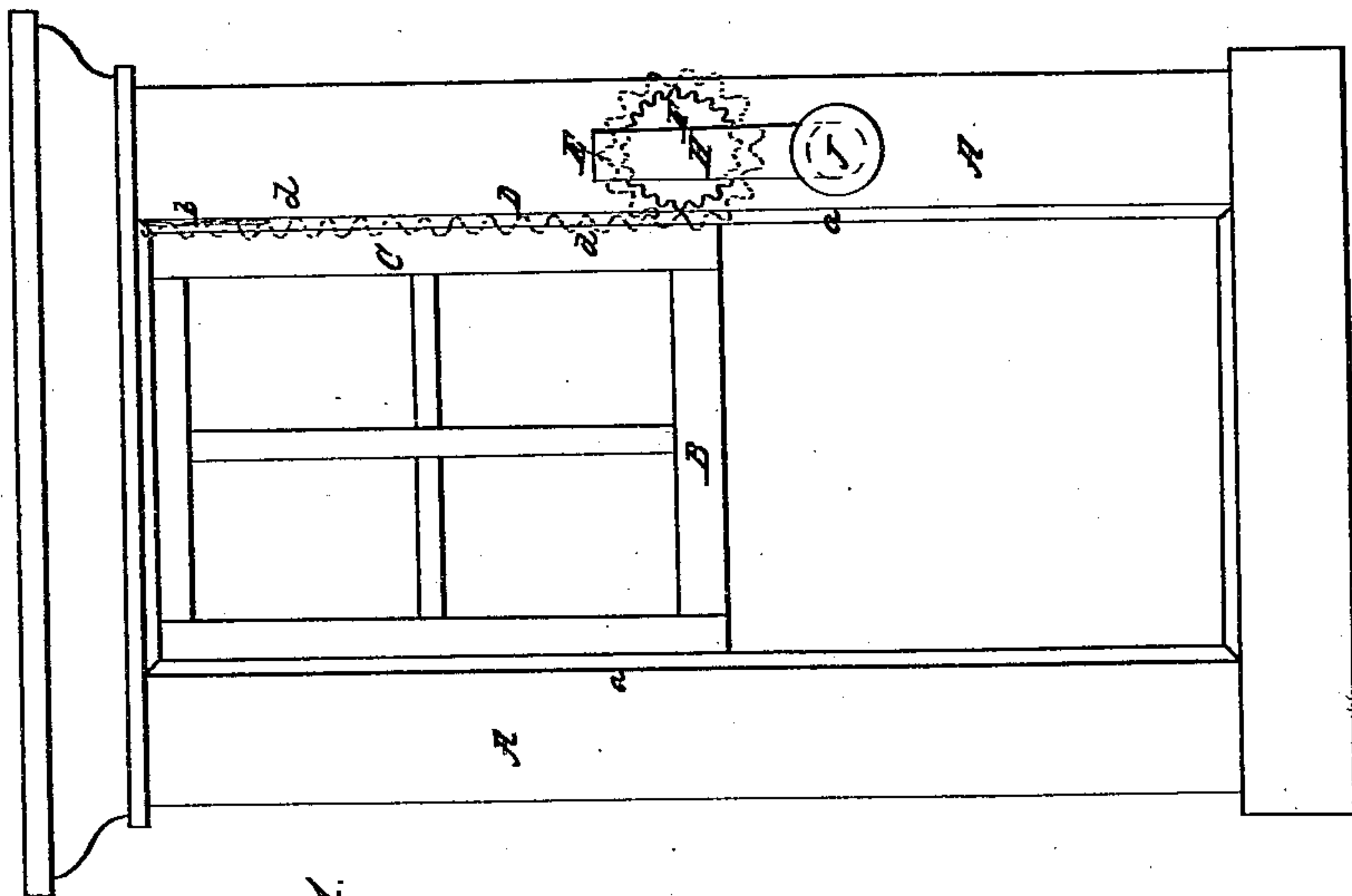
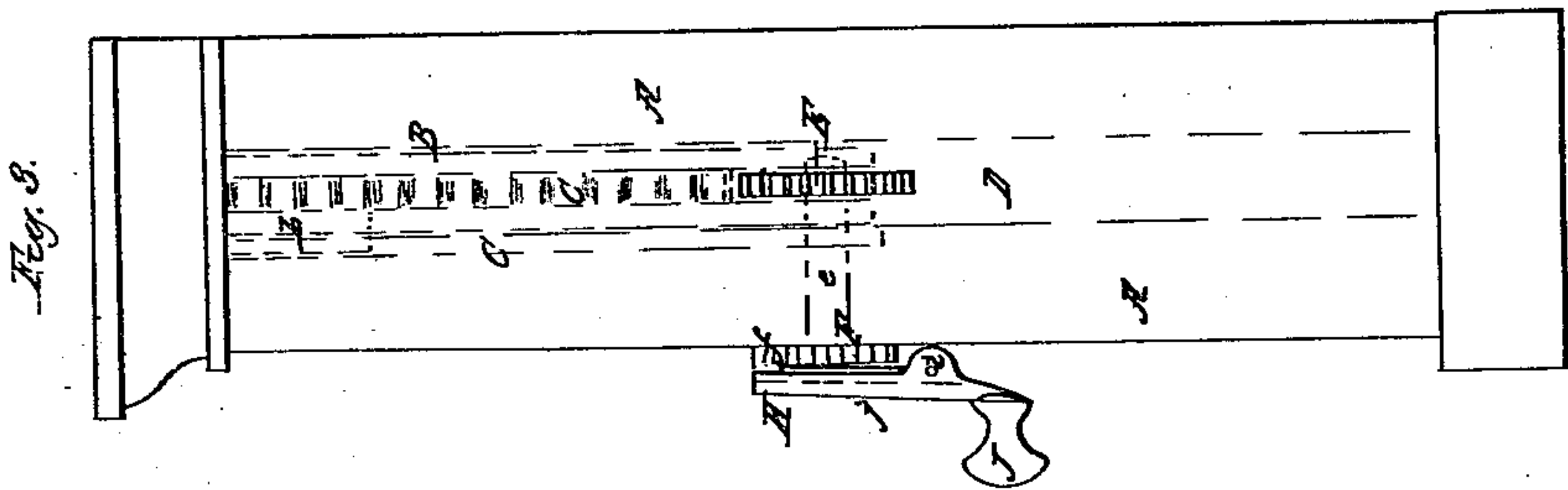
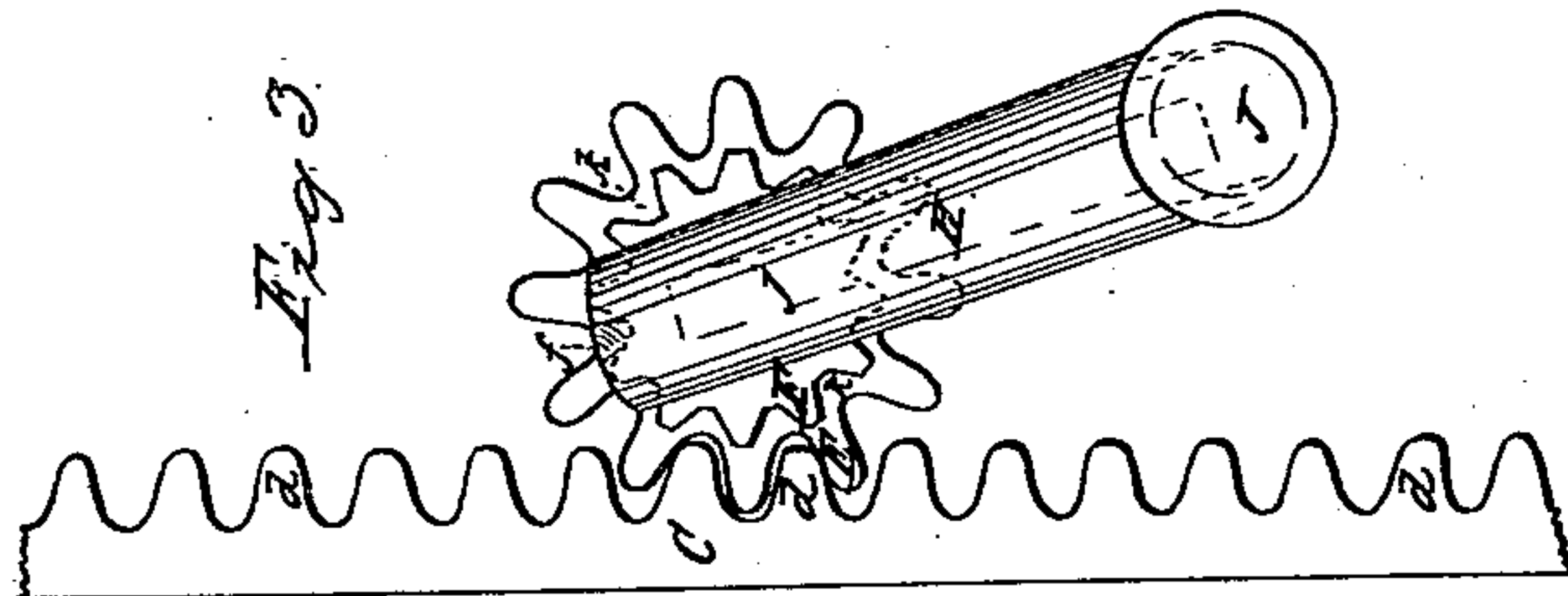


Fig. 1.

Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL MILLS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, AND F. FRANCK, OF
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ELEVATOR AND LOCK FOR WINDOW-SASHES.

Specification of Letters Patent No. 29,439, dated July 31, 1860.

To all whom it may concern:

Be it known that I, SAMUEL MILLS, of the city of New York, in the State of New York, have invented certain new and useful Improvements in Window-Sash Elevators, in Combination with a Self-Adjusting Lock; and the following is a clear and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

Figure 1, shows a side elevation. Fig. 2, represents an edge view of window frame. Fig. 3, is the elevating and locking mechanism detached, enlarged view.

The nature of my invention consists in the application and arrangement of a supporting guide, a rack and pinion to raise and depress the sash, in combination with a stationary lock, and spring crank handle, by which the sash is elevated, and fastened securely at any, and every point it is placed, and left, without the action of the springs or balance weights.

To enable others skilled in the art, to make and use my invention, I will describe it referring to the drawings and the letters marked thereon.

(A, A,) in Figs. 1, and 2, is a common window frame, made and set in the ordinary manner of any size, and style desired, into which is fitted the sash (B,) made to slide up, or down in the grooves (D,) formed by the casings (a, a,) in the usual manner.

At the top corners of the sash (B,) is secured to the edge a plate of metal (b,) projecting out from the sash sufficient distance to form a support to the top of the sash, to prevent it from sagging and causing it to bind and stick against the opposite side of the frame, which is accomplished in a very simple and efficient manner, by having a rabbet (c,) cut on the under corner of one of the inside casings (a,) for the metal plate (b,) to slide in, as the sash is moved up or down.

In one side of the sash (B,) is fitted a rack (C,) having strong deep cogs (d, d, d,) made of cast metal, the ends of the cogs being flush with the edge of the sash—which allows it to move smoothly in the groove (D,).

At about the center of the frame (A,) on either side of the window as may be desired, I place a cog-wheel, or a pinion (E,)

so as to mesh into the rack (C,) the pinion (E,) being fitted onto a shaft, or arbor (e,) of sufficient length to extend from the groove (D,) to the surface of the inside casing on the frame (A,) where a peculiarly constructed spring crank (H,) is fitted, which operates as a lock to fasten the sash in any position in which it may be placed, as will be hereafter more fully described. On the face of the inside casing, is fastened a plate of metal (F,) which forms the journal box, or bearing, for the pinion shaft (e,) the plate (F,) being made with notches on the periphery like a cog-wheel, or it may be made with a series of holes in the disk close to each other, forming a circle near the edge, into which holes, or notches (h,) a pin, or projecting stud (f,) is fitted, so as to enter freely, the pin, or stud being attached to the under side of the spring crank handle (H,) which is connected to the pinion shaft (e,) and thereby locks the pinion and holds the sash firmly. The crank handle (H,) is hinged to a long flat piece of metal (I,) having on its under side at one end a protuberance (i,) to pivot the movable crank pin (H,) to, on the end of which is a knob, or handle (J,) to take hold of, to raise or let down the sash. The piece (I,) and crank (H,) may be made of any length, so as to form as much leverage as is necessary to raise and lower the sash with ease according to its size and heft. To the piece (I,) is fastened a flat spring (j,) which extends under the piece (H,) and bearing outward on it, opposite the knob (J,) so as always to keep the stud (f,) locked in the plate (F,) when it is not pressed upon, for the purpose of raising or lowering the sash.

It is acceded to by all that there are more and greater advantages derived by my invention than all of the improvements in elevating and fastening window sash put together that have preceded it, a few of which I will here enumerate, as follows: There is no handling of the sash; the top, or bottom sash, can be moved either way, without opening the inside blind shutter, or disturbing the drapery; there is no danger of accident by the sash falling, or being opened by small children; there are no springs, pulleys, cords, or weights to get broken, or deranged, so as to cease to per-

form their functions; the operation or movement is always silent; the window is always fastened where it is left.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The application, and arrangement, of the supporting guide (b,) the rack (c,) pinion (E,) and stationary circular lock plate (F,) in combination with the spring-crank-

handle and catch; by which the sash is elevated, or depressed, and is safely secured in the position it is left, (from the hand,) substantially as specified, for the purposes herein set forth.

SAMUEL MILLS.

Witnesses:

J. B. WOODRUFF,
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